

## RESEARCH PAPER

# A cross country comparison of exposure to secondhand smoke among youth

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*Tobacco Control* 2006;15(Suppl II):ii4–ii19. doi: 10.1136/tc.2006.015685

Secondhand smoke or environmental tobacco smoke is a combination of smoke from a burning cigarette and exhaled smoke from a smoker. This substance is an involuntarily inhaled mix of compounds that causes or contributes to a wide range of adverse health effects, including cancer, cardiovascular diseases, respiratory infections, adverse reproductive effects, and asthma. This paper presents findings from Global Youth Tobacco Surveys (GYTS) conducted in 132 countries between 1999 and 2005. GYTS data indicate that a large proportion of students in every World Health Organization Region are exposed to secondhand smoke at home (43.9%) and in public places (55.8%), and many have parents (46.5%) or best friends who smoke (17.9%). GYTS data have shown widespread and strong support among students for bans on smoking in public areas all over the world (76.1%). Countries should engage this positive public health attitude among youth to promote and enforce policies for smoke-free public places and workplaces, including restaurants and bars.

Secondhand smoke (SHS) includes smoke produced by the burning of a cigarette, pipe, cigar, or other smoked tobacco and the smoke exhaled from the lungs of smokers. SHS is involuntarily inhaled by non-smokers, lingers in the air for hours after smoked tobacco has been extinguished, and can cause or contribute to a wide range of negative health effects, including adverse reproductive effects, cancer, cardiovascular disease, respiratory infections, and asthma.<sup>1–5</sup> SHS chemicals include irritants and systemic toxicants, mutagens, and carcinogens, and reproductive and developmental toxicants.<sup>1</sup> More than 60 compounds in tobacco smoke are known carcinogens, and the US Environmental Protection Agency and the International Agency for Research on Cancer have classified SHS as a group A and group 1 carcinogen, respectively, a category indicating the most dangerous cancer-causing compounds.<sup>2–6</sup> SHS exposure causes lung cancer, acute and chronic coronary heart disease (CHD), and eye and nasal irritation in adults.<sup>2–6</sup> Serious effects of SHS on children include asthma exacerbation, bronchitis and pneumonia, chronic middle ear infection, chronic respiratory symptoms, low birth weight, and sudden infant death syndrome.<sup>7</sup> Studies have concluded that high levels of particulate matter exposure from SHS may account for frequent episodes of short-term respiratory damage in non-smokers<sup>8</sup> and the risks for CHD from passive smoking are virtually indistinguishable from active smoking.<sup>9</sup> Smoke-free policies, as part of a comprehensive tobacco control programme, reduce exposure to SHS and may reduce tobacco users' daily tobacco consumption and support cessation.<sup>10</sup>

The purpose of this paper is to show levels of self-reported exposure to SHS among youth aged 13–15 years using data

from the Global Youth Tobacco Survey (GYTS) from 132 World Health Organization (WHO) Member States, territories, or other autonomous regions. For the purposes of this paper, we shall refer to all of these units as “countries” although some samples are drawn from subnational areas, non-Member States, or territories of other countries. Differences in several indicators of SHS exposure among countries in the six WHO Regions are described. The following data are presented: exposure to SHS at home, exposure to SHS in public places, percentage of students who had one or more parents who smoke, percentage of students who had most or all best friends who smoke, and percentage of students who think smoking should be banned in public places.

## The Global Youth Tobacco Survey (GYTS)

In 1999, 11 countries (Barbados, China, Fiji, Jordan, Poland, Russian Federation, South Africa, Sri Lanka, Ukraine, Venezuela, and Zimbabwe) pilot-tested the first GYTS. All 11 countries completed successful surveys during 1999. After this initial success, many countries asked WHO and the US Centers for Disease Control and Prevention (CDC) for assistance in participating in GYTS. Data from 132 countries were available for analyses in this report. For countries that have repeated the GYTS, only the most recent data are analysed. The GYTS data in this report include: 37 sites in 25 countries in the African Region; 98 sites in 37 countries in the Region of the Americas; 25 sites in 21 countries in the Eastern Mediterranean Region; 29 sites in 26 countries in the European Region; 11 sites in 7 countries in the South-East Asia Region; and 30 sites in 16 countries in the Western Pacific Region.\* Tables 1 and 2 list sites that completed the GYTS by WHO Region and indicate whether the survey was representative of the entire country or subnational areas within the country. The median student response rate was 88.6% (ranging from 55.8–100.0%); only four of the sites reported a school response rate less than 80% and, in total, over two million students in more than 18 000 schools have completed the GYTS.<sup>11–12</sup>

The GYTS provides systematic global surveillance of youth tobacco use. Countries can use GYTS data to enhance their capacity to monitor tobacco use among youth; guide development, implementation, and evaluation of their national tobacco prevention and control programmes; and compare tobacco-related data at the national, regional, and global levels.

**Abbreviations:** CDC, US Centers for Disease Control and Prevention; CHD, coronary heart disease; GYTS, Global Youth Tobacco Survey; SHS, secondhand smoke; WHO, World Health Organization

\*Notable countries, by WHO Region, that have not completed the GYTS include Canada (Region of the Americas), most countries in Western Europe (European Region), and Australia, Japan, and New Zealand (Western Pacific Region).

**Table 1** Percentage of students exposed to smoke at home and exposed to smoke outside home, Global Youth Tobacco Survey, 1999–2005\*

Country	Region name	Exposed to smoke in home	95% CI	Exposed to smoke outside home	95% CI
<b>TOTAL</b>		43.9	(± 2.5)	55.8	(± 2.5)
<b>African Region</b>		30.4	(± 3.8)	46.3	(± 4.0)
Benin					
	Atlantique Littoral, 2003	21.5	(± 3.0)	38.0	(± 3.4)
	Borgou Alibori, 2003	30.7	(± 3.7)	41.4	(± 4.3)
Botswana	Country, 2001	33.0	(± 3.1)	52.5	(± 4.1)
Burkina Faso	Ouagadougou, 2001	38.4	(± 5.6)	69.3	(± 5.3)
Côte D'Ivoire (Ivory Coast)					
	Ville Sud, 2003	39.6	(± 3.1)	66.7	(± 2.8)
	Abidjan, 2003	44.2	(± 2.9)	69.7	(± 3.4)
Ethiopia	Addis Ababa, 2003	14.9	(± 3.6)	41.2	(± 3.4)
Ghana	Country, 2002	22.2	(± 3.8)	41.4	(± 4.5)
Kenya	Country, 2001	27.2	(± 4.1)	43.2	(± 3.7)
Lesotho	Country, 2002	39.5	(± 2.7)	60.4	(± 2.6)
Malawi					
	Blantyre, 2000	19.0	(± 4.5)	30.4	(± 7.1)
	Lilongwe, 2000	16.0	(± 2.3)	35.5	(± 2.1)
Mali	Bamako, 2001	59.9	(± 4.6)	75.9	(± 5.8)
Mauritania	Country, 2001	46.3	(± 2.9)	53.8	(± 3.7)
Mauritius	Country, 2003	42.0	(± 4.7)	68.2	(± 5.1)
Mozambique					
	Maputo, 2002	24.8	(± 5.5)	39.4	(± 4.7)
	Gaza Inhambane, 2002	21.3	(± 3.1)	34.3	(± 4.4)
Namibia	Country, 2004	40.3	(± 3.3)	58.5	(± 2.6)
Niger	Country, 2001	43.2	(± 4.9)	71.3	(± 5.1)
Nigeria	Cross River State, 2000	34.3	(± 5.1)	49.6	(± 5.5)
Senegal	Country, 2002	45.8	(± 3.9)	62.6	(± 3.9)
Seychelles	Country, 2002	43.3	(± 3.3)	60.9	(± 3.9)
South Africa	Country, 2002	34.9	(± 3.6)	43.4	(± 3.1)
Swaziland	Country, 2001	29.1	(± 2.0)	58.8	(± 2.5)
Togo	Country, 2002	28.2	(± 3.9)	59.8	(± 6.1)
Uganda					
	Arua, 2002	42.9	(± 6.2)	64.0	(± 3.3)
	Kampala, 2002	16.6	(± 2.1)	46.2	(± 6.8)
	Mpigi, 2002	17.0	(± 2.8)	39.5	(± 4.1)
United Republic of Tanzania					
	Arusha, 2003	18.2	(± 3.3)	23.3	(± 5.1)
	Kilimanjaro, 2003	19.0	(± 2.7)	26.0	(± 3.1)
	Dar Es Salaam, 2003	28.3	(± 3.2)	37.1	(± 4.8)
Zambia					
	Chongwe Luangwa, 2002	31.3	(± 4.3)	43.8	(± 5.4)
	Lusaka, 2002	29.4	(± 3.9)	40.9	(± 3.3)
	Kafue, 2002	23.7	(± 3.5)	34.1	(± 4.2)
Zimbabwe					
	Harare, 2003	27.4	(± 2.7)	56.4	(± 2.5)
	Manicaland, 2003	31.2	(± 5.2)	50.3	(± 5.9)
	Matebeleland & Bulawayo, 2003	29.9	(± 4.5)	56.9	(± 3.2)
<b>Region of the Americas</b>		41.6	(± 2.6)	63.0	(± 2.6)
Antigua and Barbuda	Country, 2004	18.0	(± 2.8)	40.3	(± 4.2)
Argentina					
	Buenos Aires, 2003	71.0	(± 1.9)	82.0	(± 3.6)
	Capital Federal, 2003	61.1	(± 3.2)	82.7	(± 2.4)
Bahamas	Country, 2004	21.6	(± 4.2)	51.1	(± 5.1)
Barbados	Country, 2002	22.4	(± 3.0)	51.3	(± 2.9)
Belize	Country, 2002	32.6	(± 4.4)	60.3	(± 3.7)

Table 1 Continued

Country	Region name	Exposed to smoke in home	95% CI	Exposed to smoke outside home	95% CI
Bolivia	Cochabamba, 2003	42.7	( $\pm 4.1$ )	60.9	( $\pm 4.1$ )
	El Alto, 2003	33.8	( $\pm 1.9$ )	47.5	( $\pm 2.6$ )
	La Paz, 2003	34.3	( $\pm 3.2$ )	52.9	( $\pm 3.2$ )
	Oruro, 2003	38.6	( $\pm 4.6$ )	55.1	( $\pm 4.2$ )
	Santa Cruz, 2003	51.4	( $\pm 2.6$ )	62.6	( $\pm 3.2$ )
Brazil	Alagoas, 2004	37.4	( $\pm 3.3$ )	50.6	( $\pm 5.2$ )
	Aracaju, 2002	31.1	( $\pm 3.9$ )	51.3	( $\pm 3.6$ )
	Boa Vista, 2004	34.8	( $\pm 4.6$ )	46.0	( $\pm 5.5$ )
	Curitiba, 2002	40.4	( $\pm 4.2$ )	60.3	( $\pm 4.6$ )
	Espirito Santo Vitoria, 2004	27.8	( $\pm 3.8$ )	49.5	( $\pm 3.0$ )
	Florianopolis, 2004	38.4	( $\pm 3.7$ )	53.6	( $\pm 2.9$ )
	Fortaleza, 2002	44.9	( $\pm 6.1$ )	61.0	( $\pm 4.6$ )
	Goiania, 2002	34.7	( $\pm 4.9$ )	50.7	( $\pm 3.8$ )
	Matto Grosso do Sul, 2002	40.6	( $\pm 5.0$ )	53.3	( $\pm 4.2$ )
	Paraiba, 2002	33.6	( $\pm 4.1$ )	47.8	( $\pm 4.8$ )
	Rio de Janeiro Public, 2005	37.0	( $\pm 5.6$ )	51.8	( $\pm 3.9$ )
	Rio Grande do Norte, 2002	36.9	( $\pm 4.9$ )	43.0	( $\pm 3.5$ )
	Rio Grande do Sul, 2002	48.2	( $\pm 4.1$ )	62.2	( $\pm 4.3$ )
	Salvador, 2005	20.4	( $\pm 3.9$ )	41.9	( $\pm 5.8$ )
	Sao Luis, 2004	29.6	( $\pm 3.8$ )	46.0	( $\pm 2.3$ )
	Tocantins, 2002	36.5	( $\pm 7.3$ )	49.8	( $\pm 6.7$ )
Chile	Concepcion, 2003	50.0	( $\pm 4.3$ )	64.2	( $\pm 6.0$ )
	Coquimbo, 2003	43.8	( $\pm 4.3$ )	54.9	( $\pm 2.0$ )
	Santiago, 2003	60.6	( $\pm 3.3$ )	69.8	( $\pm 2.3$ )
	Valparaíso, 2003	50.7	( $\pm 4.4$ )	63.3	( $\pm 4.2$ )
Colombia	Bogota, 2001	43.6	( $\pm 2.4$ )	60.6	( $\pm 2.4$ )
Costa Rica	Country, 2002	29.4	( $\pm 2.2$ )	51.0	( $\pm 2.4$ )
Cuba	Havana, 2004	62.4	( $\pm 3.9$ )	65.0	( $\pm 4.2$ )
	4 Additional Provinces, 2004	52.0	( $\pm 4.0$ )	56.7	( $\pm 4.5$ )
Dominica	Country, 2004	26.3	( $\pm 3.3$ )	60.2	( $\pm 3.3$ )
Dominican Republic	Country, 2004	33.1	( $\pm 3.1$ )	41.9	( $\pm 3.1$ )
Ecuador	Guayaquil, 2001	31.3	( $\pm 2.8$ )	46.0	( $\pm 3.1$ )
	Quito, 2001	36.1	( $\pm 4.0$ )	56.9	( $\pm 3.6$ )
	Zamora, 2001	41.8	( $\pm 3.2$ )	61.7	( $\pm 3.8$ )
El Salvador	Country, 2003	14.8	( $\pm 4.2$ )	39.5	( $\pm 11.6$ )
Grenada	Country, 2004	27.3	( $\pm 2.6$ )	61.8	( $\pm 3.6$ )
Guatemala	Chimal Tenago, 2002	24.9	( $\pm 4.7$ )	42.9	( $\pm 5.3$ )
	Guatemala City, 2002	36.3	( $\pm 4.1$ )	49.4	( $\pm 3.3$ )
Guyana	Country, 2004	33.4	( $\pm 4.0$ )	61.1	( $\pm 4.2$ )
Haiti	Port au Prince, 2000	31.3	( $\pm 7.8$ )	51.8	( $\pm 5.2$ )
Honduras	San Pedro Sula La Ceiba, 2003	29.7	( $\pm 3.7$ )	41.8	( $\pm 8.8$ )
	Tegucigalpa, 2003	29.6	( $\pm 3.3$ )	42.2	( $\pm 5.4$ )
Jamaica	Country, 2000	30.7	( $\pm 3.2$ )	59.2	( $\pm 3.5$ )
Mexico	Chetumal, 2003	34.8	( $\pm 3.2$ )	48.7	( $\pm 3.0$ )
	Chilpancingo, 2005	30.3	( $\pm 2.5$ )	42.9	( $\pm 3.7$ )
	Cuernavaca, 2003	41.7	( $\pm 2.5$ )	56.5	( $\pm 2.9$ )
	Culican, 2005	34.3	( $\pm 4.6$ )	47.1	( $\pm 3.1$ )
	Durango, 2005	40.7	( $\pm 4.4$ )	52.0	( $\pm 2.4$ )
	Guadalajara, 2003	46.2	( $\pm 2.4$ )	60.4	( $\pm 3.1$ )
	Hermosillo, 2005	43.3	( $\pm 3.8$ )	58.3	( $\pm 4.5$ )
	Juarez, 2003	48.7	( $\pm 3.7$ )	58.1	( $\pm 3.4$ )
	Leon, 2005	49.7	( $\pm 3.0$ )	58.9	( $\pm 2.6$ )
	Merida, 2005	36.6	( $\pm 3.3$ )	51.6	( $\pm 3.9$ )
	Mexico City, 2003	51.6	( $\pm 2.6$ )	60.4	( $\pm 3.1$ )
	Monterrey, 2005	44.2	( $\pm 3.6$ )	54.9	( $\pm 2.8$ )
	Nuevo Laredo, 2003	42.9	( $\pm 3.2$ )	54.1	( $\pm 4.0$ )
	Oaxaca, 2003	23.0	( $\pm 2.8$ )	41.9	( $\pm 3.9$ )
	Puebla, 2003	41.7	( $\pm 4.2$ )	50.0	( $\pm 3.4$ )
	Tapachula, 2003	29.2	( $\pm 3.7$ )	38.1	( $\pm 3.4$ )
	Tepic, 2005	32.4	( $\pm 2.4$ )	51.5	( $\pm 3.1$ )
	Tijuana, 2003	36.8	( $\pm 2.2$ )	51.1	( $\pm 2.7$ )
	Toluca, 2005	39.8	( $\pm 2.8$ )	53.0	( $\pm 2.5$ )
	Veracruz, 2005	35.3	( $\pm 2.6$ )	48.2	( $\pm 4.2$ )

Table 1 Continued

Country	Region name	Exposed to smoke in home	95% CI	Exposed to smoke outside home	95% CI
Montserrat	Zacatecas, 2005	43.8	(± 3.8)	55.2	(± 2.8)
Nicaragua	Country, 2000	18.1	**	43.4	**
Panama	Country, 2003	41.5	(± 2.7)	50.8	(± 2.5)
Peru	Country, 2002	32.0	(± 2.8)	51.8	(± 2.7)
Saint Kitts and Nevis	Country, 2003	28.7	(± 2.1)	40.4	(± 3.0)
Saint Lucia	Country, 2002	16.5	(± 3.3)	48.8	(± 4.0)
Saint Vincent and The Grenadines	Country, 2000	26.9	(± 2.5)	58.1	(± 3.5)
Suriname	Country, 2000	32.5	(± 2.9)	64.1	(± 3.4)
Trinidad and Tobago	Country, 2004	49.7	(± 3.8)	64.2	(± 4.5)
United States	Country, 2000	37.2	(± 2.5)	68.7	(± 2.3)
Uruguay	Country, 2000	42.1	(± 2.1)	69.7	(± 1.8)
	Colonia, 2000	58.3	(± 4.1)	72.1	(± 4.1)
	Maldonado, 2000	64.2	(± 3.6)	79.3	(± 3.9)
	Montevideo, 2000	64.6	(± 2.8)	82.2	(± 2.3)
	Rivera, 2000	67.1	(± 3.1)	80.8	(± 3.1)
US Virgin Islands	Country, 2004	22.2	(± 2.4)	37.5	(± 3.0)
Paraguay	Alto Parana, 2003	41.6	(± 3.2)	60.4	(± 3.5)
	Amambay, 2003	36.0	(± 3.2)	54.0	(± 2.8)
	Asuncion, 2003	42.4	(± 2.2)	66.3	(± 2.3)
	Central, 2003	38.6	(± 3.1)	56.2	(± 3.6)
Venezuela	Barinas, 2003	34.4	(± 2.9)	41.5	(± 2.9)
	Cojedes, 2003	40.4	(± 4.8)	51.3	(± 2.9)
	Lara, 2003	44.4	(± 3.1)	54.4	(± 3.0)
	Monagas, 2003	39.3	(± 3.5)	45.4	(± 2.6)
	Nueva Esparta, 2001	42.8	(± 2.4)	50.5	(± 4.4)
	Tachira, 2001	41.8	(± 3.5)	49.6	(± 4.0)
	Yaracuy state, 2001	39.2	(± 2.7)	46.3	(± 3.7)
	Zulia, 2001	43.8	(± 6.2)	45.0	(± 5.4)
Virgin Islands (British)	Country, 2001	10.4	(± 3.4)	43.3	(± 5.4)
<b>Eastern Mediterranean Region</b>		37.6	(± 3.5)	46.3	(± 4.4)
Afghanistan	Kabul, 2004	38.8	(± 5.6)	45.0	(± 12.1)
	Other Provinces, 2004	31.8	(± 5.4)	49.5	(± 8.9)
Bahrain	Country, 2002	38.7	(± 3.3)	45.3	(± 3.8)
Djibouti	Country, 2003	39.5	(± 5.1)	43.2	(± 6.3)
Egypt	Country, 2001	32.1	(± 3.1)	44.0	(± 5.7)
Gaza Strip-West Bank	Gaza Strip, 2000	87.0	(± 2.5)	50.9	(± 3.2)
	West Bank, 2000	66.8	(± 2.2)	59.9	(± 3.7)
Iran, Islamic Republic of	Country, 2003	41.7	(± 2.4)	50.6	(± 2.6)
Jordan	Country, 2003	63.0	(± 3.6)	63.8	(± 2.8)
Kuwait	Country, 2001	42.9	(± 2.0)	59.1	(± 2.3)
Lebanon	Country, 2001	77.3	(± 2.9)	67.1	(± 1.6)
Libyan Arab Jamahiriya	Country, 2003	40.4	(± 4.1)	38.6	(± 3.4)
Morocco	Country, 2001	25.1	(± 3.2)	37.6	(± 3.0)
Oman	Country, 2002	21.0	(± 5.2)	30.3	(± 5.6)
Pakistan	Islamabad, 2003	26.6	(± 3.9)	33.9	(± 4.9)
	Lahore, 2003	22.2	(± 8.3)	27.7	(± 8.2)
	Quetta, 2004	33.5	(± 5.3)	34.3	(± 7.1)
Qatar	Country, 2004	30.2	(± 2.3)	46.8	(± 3.4)
Saudi Arabia	Riyadh, 2001	25.9	(± 3.0)	33.3	(± 3.7)

Table 1 Continued

Country	Region name	Exposed to smoke in home	95% CI	Exposed to smoke outside home	95% CI
Somalia					
Sudan	Somaliland, 2004	56.9	( $\pm 11.9$ )	63.9	( $\pm 8.8$ )
Syrian Arab Republic	Country, 2001	29.2	( $\pm 2.9$ )	41.0	( $\pm 3.2$ )
Tunisia	Country, 2002	54.5	( $\pm 6.5$ )	49.7	( $\pm 5.5$ )
United Arab Emirates	Country, 2001	62.4	( $\pm 2.7$ )	65.3	( $\pm 2.4$ )
Yemen	Country, 2002	30.8	( $\pm 2.5$ )	36.0	( $\pm 3.3$ )
Yemen	Country, 2003	44.0	( $\pm 2.1$ )	47.6	( $\pm 2.4$ )
<b>European Region</b>		78.0	( $\pm 2.6$ )	84.8	( $\pm 2.2$ )
Albania	Country, 2004	84.8	( $\pm 2.6$ )	80.6	( $\pm 2.4$ )
Armenia	Country, 2004	89.8	( $\pm 1.8$ )	85.1	( $\pm 3.2$ )
Belarus	Country, 2004	75.3	( $\pm 1.9$ )	90.1	( $\pm 1.2$ )
Bosnia and Herzegovina					
	Federation of Bosnia and Herzegovina, 2003	96.7	( $\pm 0.7$ )	91.5	( $\pm 1.1$ )
	Republic of Srpska, 2003	96.2	( $\pm 1.1$ )	91.1	( $\pm 1.3$ )
Bulgaria	Country, 2002	67.7	( $\pm 2.6$ )	75.7	( $\pm 2.5$ )
Croatia (Hrvatska)	Country, 2003	94.9	( $\pm 1.2$ )	91.1	( $\pm 1.0$ )
Czech Republic	Country, 2002	41.1	( $\pm 2.8$ )	74.5	( $\pm 2.2$ )
Estonia	Country, 2003	80.6	( $\pm 1.6$ )	90.7	( $\pm 0.9$ )
Georgia	Country, 2003	95.0	( $\pm 0.9$ )	93.8	( $\pm 1.1$ )
Greece	Athens, 2004	91.1	( $\pm 2.8$ )	94.3	( $\pm 1.1$ )
Hungary	Country, 2003	84.0	( $\pm 1.6$ )	92.8	( $\pm 1.7$ )
Kazakhstan	Country, 2004	72.7	( $\pm 2.7$ )	71.8	( $\pm 3.1$ )
Kyrgyzstan	Country, 2004	64.4	( $\pm 4.7$ )	64.9	( $\pm 4.1$ )
Latvia	Country, 2002	59.0	( $\pm 2.7$ )	71.3	( $\pm 1.9$ )
Lithuania	Country, 2005	43.1	( $\pm 3.0$ )	64.6	( $\pm 2.0$ )
Macedonia	Country, 2003	91.9	( $\pm 1.4$ )	80.2	( $\pm 2.9$ )
Poland	Country, 2003	86.7	( $\pm 2.5$ )	90.4	( $\pm 1.7$ )
Republic of Moldova	Country, 2004	62.3	( $\pm 2.8$ )	96.7	( $\pm 1.5$ )
Romania	Country, 2004	90.4	( $\pm 1.9$ )	81.5	( $\pm 2.7$ )
Russian Federation					
	Moscow, 1999	55.3	( $\pm 2.2$ )	72.5	( $\pm 2.1$ )
	Sarov, 2002	36.5	( $\pm 2.9$ )	73.6	( $\pm 2.9$ )
Serbia and Montenegro					
	Montenegro, 2004	95.0	( $\pm 1.1$ )	84.6	( $\pm 2.4$ )
	Republic of Serbia, 2003	97.7	( $\pm 0.5$ )	90.6	( $\pm 1.2$ )
Slovakia	Country, 2003	79.5	( $\pm 2.2$ )	85.7	( $\pm 1.2$ )
Slovenia	Country, 2003	65.9	( $\pm 2.5$ )	89.0	( $\pm 1.3$ )
Tajikistan	Country, 2004	51.5	( $\pm 6.9$ )	69.7	( $\pm 5.4$ )
Turkey	Country, 2003	81.6	( $\pm 0.9$ )	85.9	( $\pm 1.1$ )
Ukraine	Country, 2005	70.1	( $\pm 2.8$ )	84.4	( $\pm 2.5$ )
<b>South-East Asia Region</b>		37.0	( $\pm 1.6$ )	49.4	( $\pm 1.7$ )
Bangladesh					
	Dhaka, 2004	33.8	( $\pm 2.1$ )	46.7	( $\pm 3.8$ )
Bhutan	Country, 2004	29.2	( $\pm 3.8$ )	47.4	( $\pm 6.2$ )
India	Country, 2004	36.4	( $\pm 1.6$ )	48.7	( $\pm 1.6$ )
Indonesia					
	Bekasi, 2004	69.0	( $\pm 2.1$ )	77.4	( $\pm 2.4$ )
	Jakarta, 2004	68.8	( $\pm 3.9$ )	82.7	( $\pm 3.5$ )

**Table 1** Continued

Country	Region name	Exposed to smoke in home	95% CI	Exposed to smoke outside home	95% CI
Maldives	Medan, 2004	69.6	(±2.8)	79.9	(±4.0)
	Rural, 2004	51.2	(±4.6)	77.1	(±2.5)
	Urban, 2003	45.4	(±3.8)	69.2	(±4.1)
Nepal	Biratnagar, 2004	84.7	(±6.8)	61.5	(±7.7)
	Mahendranagar and Dhangad, 2004	42.3	(±4.7)	55.3	(±3.3)
Sri Lanka					
	Country, 2003	50.9	(±3.2)	68.3	(±3.1)
Western Pacific Region		50.5	(±3.2)	53.6	(±2.8)
American Samoa					
	Country, 2005	61.9	(±3.4)	†	†
Cambodia					
	Country, 2003	47.0	(±5.8)	58.5	(±5.5)
China					
	Chongqing, 1999	56.8	(±3.7)	59.6	(±3.2)
	Guangdong, 1999	49.4	(±2.8)	48.4	(±2.8)
	Puyang, 2005	32.6	(±5.4)	34.3	(±4.2)
	Shandong, 1999	48.9	(±3.8)	42.9	(±2.7)
	Shanghai, 2005	47.0	(±2.8)	35.2	(±3.2)
	Tianjin, 2005	45.2	(±4.1)	38.5	(±3.7)
	Zhuhai, 2005	44.2	(±3.1)	40.2	(±2.6)
Cook Islands					
	Country, 2003	57.6	(±4.2)	73.0	(±3.0)
Fiji					
	Country, 1999	49.4	(±4.8)	68.6	(±3.4)
Guam					
	Country, 2002	59.4	(±2.8)	†	†
Lao People's Democratic Republic					
	Luang Prabang Province, 2003	35.7	(±4.5)	45.5	(±4.7)
	Savannakhet, 2003	45.5	(±3.8)	60.6	(±3.9)
	Vientiane Municipality, 2003	43.2	(±2.2)	57.0	(±3.3)
	Vientiane Province, 2003	42.9	(±5.7)	57.2	(±8.1)
Macau					
	Macau, 2001	39.0	(±3.9)	†	†
Malaysia					
	Country, 2004	59.0	(±4.1)	75.7	(±2.5)
Micronesia					
	Kosrae, 2000	53.2	(±3.5)	†	†
	Pohnpei, 2000	51.2	(±3.0)	†	†
Mongolia					
	Country, 2003	63.7	(±3.2)	48.4	(±2.7)
Northern Mariana					
	Country, 2000	64.9	(±3.7)	80.2	(±4.5)
Palau					
	Country, 2000	46.0	(±3.7)	49.1	(±3.9)
Philippines					
	Country, 2004	56.4	(±2.9)	58.6	(±2.7)
Singapore					
	Country, 2000	35.1	(±1.5)	65.1	(±1.3)
Viet Nam					
	Denang, 2003	65.8	(±3.4)	†	†
	Haiphong, 2003	56.5	(±6.6)	†	†
	Hanoi, 2003	57.7	(±10.4)	†	†
	Hochiminh, 2003	64.7	(±6.1)	†	†
	Tuenquang, 2003	57.3	(±8.5)	†	†

\*Data from 131 countries are included in this report. Notable countries, by WHO Region, that have not completed the GYTS include: Region of the Americas (Canada), European Region (most Western European countries), and Western Pacific Region (Australia, Japan, and New Zealand).

\*\*No confidence interval calculated because the survey was conducted among a census of students.

†Not available.

The GYTS uses a standardised methodology for constructing sampling frames, selecting schools and classes, preparing questionnaires, carrying out field procedures, and processing data. The GYTS includes data on prevalence of cigarette and other tobacco use, perceptions and attitudes about tobacco, access to and availability of tobacco products, exposure to secondhand smoke, school curricula, media and advertising, and smoking cessation.

The GYTS questionnaire is self-administered in classrooms, and school, class, and student anonymity is maintained throughout the GYTS process. Country-specific questionnaires consist of a core set of questions† that all countries ask and unique country-specific questions. The final country questionnaires are translated in-country into local languages

and back-translated to check for accuracy. GYTS country research coordinators conduct focus groups of students aged 13–15 to further test the accuracy of the translation and student understanding of the questions.

Estimates presented in this study include exposure to smoke at home (defined as the percentage of students who answered “1 or more days” to the question, “During the past 7 days, on how many days have people smoked in your home, in your presence?”), exposure to smoke in public places (defined as the percentage of students who answered “1 or more days” to the question, “During the past 7 days, on

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†The core GYTS questionnaire in Arabic, English, French, and Spanish can be found at: [www.cdc.gov/tobacco/global](http://www.cdc.gov/tobacco/global).

**Table 2** Percentage of students who had one or more parents who smoke, had most or all best friends who smoke, and supported ban on smoking in public places, Global Youth Tobacco Survey, 1999–2005\*

Country	Region name	Had one or more parents who smoke	95% CI	Had most or all best friends who smoke	95% CI	Supported ban on smoking in public places	95% CI
<b>TOTAL</b>		46.5	(± 3.2)	17.9	(± 2.0)	76.1	(± 2.2)
<b>African Region</b>		22.7	(± 3.7)	7.2	(± 1.9)	60.2	(± 5.9)
Benin							
	Atlantique Littoral, 2003	6.6	(± 1.7)	5.6	(± 2.0)	76.5	(± 4.3)
	Borgou Alibori, 2003	19.4	(± 2.2)	7.3	(± 3.0)	61.2	(± 5.3)
Botswana							
	Country, 2001	26.0	(± 2.6)	7.0	(± 2.1)	70.3	(± 4.5)
Burkina Faso							
	Ouagadougou, 2001	15.3	(± 1.9)	7.0	(± 1.7)	80.3	(± 6.3)
Côte D'Ivoire	(Ivory Coast)						
	Ville Sud, 2003	17.9	(± 1.6)	†	†	84.7	(± 2.1)
	Abidjan, 2003	17.4	(± 1.7)	†	†	84.9	(± 2.3)
Ethiopia							
	Addis Ababa, 2003	8.8	(± 1.9)	3.0	(± 1.5)	95.7	(± 1.7)
Ghana							
	Country, 2002	13.6	(± 4.0)	4.1	(± 1.9)	58.1	(± 8.8)
Kenya							
	Country, 2001	19.4	(± 6.0)	7.0	(± 2.2)	39.8	(± 8.2)
Lesotho							
	Country, 2002	31.7	(± 2.7)	10.6	(± 2.0)	32.9	(± 7.5)
Malawi							
	Blantyre, 2000	10.2	(± 4.0)	4.8	(± 1.1)	90.1	(± 3.0)
	Lilongwe, 2000	8.3	(± 2.4)	4.2	(± 1.5)	85.1	(± 6.8)
Mali							
	Bamako, 2001	19.1	(± 3.2)	15.3	(± 2.3)	77.0	(± 7.0)
Mauritania							
	Country, 2001	26.2	(± 2.6)	12.2	(± 1.7)	61.9	(± 4.0)
Mauritius							
	Country, 2003	42.7	(± 2.6)	10.2	(± 3.4)	61.8	(± 5.1)
Mozambique							
	Maputo, 2002	21.3	(± 3.0)	1.5	(± 0.9)	77.4	(± 3.9)
	Gaza Inhambane, 2002	16.6	(± 2.8)	1.0	(± 0.9)	73.3	(± 7.4)
Namibia							
	Country, 2004	28.1	(± 2.9)	12.6	(± 2.3)	34.1	(± 3.6)
Niger							
	Country, 2001	16.3	(± 2.3)	11.7	(± 2.1)	56.7	(± 5.7)
Nigeria							
	Cross River State, 2000	14.1	(± 3.6)	7.3	(± 2.2)	60.2	(± 4.6)
Senegal							
	Country, 2002	21.6	(± 2.9)	†	†	89.5	(± 1.5)
Seychelles							
	Country, 2002	31.4	(± 2.7)	12.1	(± 2.7)	64.8	(± 7.6)
South Africa							
	Country, 2002	36.9	(± 3.7)	10.6	(± 2.1)	59.4	(± 4.1)
Swaziland							
	Country, 2001	21.0	(± 1.5)	4.4	(± 1.1)	26.5	(± 4.2)
Togo							
	Country, 2002	14.8	(± 2.1)	3.7	(± 1.3)	85.1	(± 4.3)
Uganda							
	Arua, 2002	32.7	(± 6.2)	8.4	(± 2.6)	32.0	(± 4.3)
	Kampala, 2002	14.9	(± 2.5)	2.0	(± 0.8)	67.1	(± 5.7)
	Mpigi, 2002	12.9	(± 3.4)	3.0	(± 1.0)	58.7	(± 5.9)
United Republic of Tanzania							
	Arusha, 2003	11.5	(± 2.4)	3.3	(± 1.8)	70.2	(± 4.8)
	Kilimanjaro, 2003	22.5	(± 3.2)	7.3	(± 2.8)	66.8	(± 3.6)
	Dar Es Salaam, 2003	13.4	(± 2.0)	3.3	(± 1.4)	79.5	(± 3.1)
Zambia							
	Chongwe Luangwa, 2002	28.6	(± 3.3)	11.7	(± 2.7)	40.5	(± 6.1)
	Lusaka, 2002	23.2	(± 3.7)	11.5	(± 2.8)	49.8	(± 6.6)
	Kafue, 2002	22.8	(± 3.3)	10.5	(± 2.8)	34.9	(± 4.0)
Zimbabwe							
	Harare, 2003	27.9	(± 3.5)	5.5	(± 1.4)	43.7	(± 6.8)
	Manicaland, 2003	33.7	(± 3.9)	11.1	(± 3.5)	34.8	(± 9.8)
	Matebeleland & Bulawayo, 2003	29.7	(± 4.1)	8.0	(± 2.8)	50.7	(± 11.7)
<b>Region of the Americas</b>		41.0	(± 3.5)	39.3	(± 2.6)	80.4	(± 2.9)
Antigua and Barbuda							
	Country, 2004	18.6	(± 2.6)	5.5	(± 1.5)	72.3	(± 3.5)
Argentina							
	Buenos Aires, 2003	56.6	(± 2.3)	28.0	(± 4.2)	68.0	(± 4.3)
	Capital Federal, 2003	56.8	(± 3.7)	21.6	(± 3.5)	65.8	(± 1.5)
Bahamas							
	Country, 2004	24.8	(± 3.6)	4.3	(± 0.9)	71.6	(± 6.5)
Barbados							
	Country, 2002	21.9	(± 3.0)	6.8	(± 1.5)	77.2	(± 4.8)
Belize							



Table 2 Continued

Country	Region name	Had one or more parents who smoke	95% CI	Had most or all best friends who smoke	95% CI	Supported ban on smoking in public places	95% CI
Bolivia	Country, 2002	31.8	(±3.5)	9.2	(±2.1)	52.2	(±8.8)
	Cochabamba, 2003	44.8	(±2.0)	15.7	(±2.5)	80.4	(±3.1)
	El Alto, 2003	40.2	(±3.1)	11.0	(±1.3)	77.6	(±3.0)
	La Paz, 2003	42.5	(±2.6)	10.9	(±2.1)	82.0	(±3.2)
	Oruro, 2003	41.4	(±3.3)	13.8	(±4.0)	79.1	(±3.7)
	Santa Cruz, 2003	47.1	(±2.5)	12.9	(±2.4)	80.7	(±2.2)
Brazil	Alagoas, 2004	34.7	(±4.2)	9.4	(±3.3)	88.8	(±2.7)
	Aracaju, 2002	29.0	(±4.2)	7.6	(±3.0)	87.1	(±2.8)
	Boa Vista, 2004	36.5	(±3.3)	8.8	(±3.5)	84.2	(±2.9)
	Curitiba, 2002	38.0	(±3.5)	10.8	(±3.0)	84.2	(±3.1)
	Espirito Santo Vitoria, 2004	30.9	(±4.2)	6.9	(±2.4)	86.8	(±2.5)
	Florianopolis, 2004	40.0	(±3.7)	7.1	(±1.4)	85.3	(±1.9)
	Fortaleza, 2002	44.8	(±6.4)	10.8	(±4.8)	87.1	(±3.9)
	Goiania, 2002	34.5	(±4.1)	7.1	(±2.9)	86.2	(±3.5)
	Matto Grosso do Sul, 2002	36.9	(±3.6)	10.8	(±2.9)	88.1	(±2.6)
	Paraiba, 2002	33.1	(±3.6)	5.6	(±2.1)	88.3	(±4.0)
	Rio de Janeiro Public, 2005	39.0	(±3.9)	9.5	(±2.9)	86.4	(±3.6)
	Rio Grande do Norte, 2002	35.7	(±4.4)	6.9	(±2.0)	87.7	(±2.6)
	Rio Grande do Sul, 2002	47.7	(±4.5)	15.5	(±4.3)	83.3	(±2.0)
	Salvador, 2005	18.9	(±3.4)	3.9	(±2.0)	92.7	(±2.4)
	Sao Luis, 2004	35.0	(±2.9)	11.5	(±2.8)	85.5	(±3.7)
	Tocantins, 2002	35.0	(±8.3)	8.9	(±3.0)	89.6	(±3.4)
Chile	Concepcion, 2003	56.6	(±3.0)	23.2	(±6.6)	76.0	(±2.8)
	Coquimbo, 2003	55.0	(±4.2)	18.7	(±3.9)	79.2	(±3.4)
	Santiago, 2003	67.2	(±2.2)	26.5	(±4.1)	71.1	(±3.4)
	Valparaiso, 2003	60.6	(±2.8)	23.0	(±4.3)	75.9	(±3.1)
Colombia	Bogota, 2001	42.2	(±2.2)	24.2	(±2.5)	78.9	(±2.1)
Costa Rica	Country, 2002	28.1	(±2.0)	†	†	81.6	(±2.5)
Cuba	Havana, 2004	54.5	(±3.7)	10.8	(±2.3)	84.5	(±2.6)
	4 Additional Provinces, 2004	47.0	(±5.2)	7.3	(±2.1)	85.9	(±4.4)
Dominica	Country, 2004	25.6	(±3.3)	9.5	(±1.9)	73.0	(±4.2)
Dominican Republic	Country, 2004	24.0	(±2.2)	3.5	(±1.0)	85.8	(±1.7)
Ecuador	Guayaquil, 2001	38.6	(±2.4)	8.5	(±1.8)	83.3	(±2.7)
	Quito, 2001	49.3	(±2.7)	15.8	(±2.7)	80.1	(±3.5)
	Zamora, 2001	46.3	(±3.8)	19.3	(±4.2)	81.5	(±4.0)
El Salvador	Country, 2003	19.7	(±5.2)	11.4	(±2.7)	88.3	(±3.0)
Grenada	Country, 2004	30.4	(±3.3)	6.8	(±1.5)	77.7	(±3.7)
Guatemala	Chimal Tenago, 2002	18.3	(±2.8)	11.4	(±3.6)	83.5	(±2.8)
	Guatemala City, 2002	30.4	(±3.1)	13.3	(±3.1)	78.2	(±3.3)
Guyana	Country, 2004	33.7	(±3.6)	4.6	(±1.7)	70.9	(±6.2)
Haiti	Port au Prince, 2000	22.4	(±7.1)	13.4	(±4.2)	74.9	(±6.2)
Honduras	San Pedro Sula La Ceiba, 2003	21.0	(±5.9)	15.4	(±5.3)	81.5	(±4.1)
	Tegucigalpa, 2003	26.0	(±3.3)	15.4	(±4.1)	82.1	(±3.2)
Jamaica	Country, 2000	†	†	7.8	(±2.0)	70.6	(±7.6)
Mexico	Chetumal, 2003	32.6	(±3.2)	61.7	(±3.2)	87.4	(±2.7)
	Chilpancingo, 2005	28.7	(±2.6)	48.5	(±3.0)	91.0	(±1.8)
	Cuernavaca, 2003	42.1	(±3.1)	63.6	(±3.0)	80.3	(±2.7)
	Culican, 2005	32.2	(±3.3)	48.0	(±3.0)	93.4	(±1.9)
	Durango, 2005	42.6	(±4.3)	51.9	(±4.4)	87.6	(±2.5)
	Guadalajara, 2003	42.7	(±3.1)	59.4	(±3.5)	84.4	(±2.5)
	Hermosillo, 2005	41.1	(±3.2)	50.2	(±3.1)	88.7	(±2.4)
	Juarez, 2003	50.1	(±4.0)	60.4	(±3.0)	86.6	(±2.5)
	Leon, 2005	48.5	(±2.3)	58.4	(±3.2)	88.8	(±2.3)
	Merida, 2005	36.9	(±2.5)	59.7	(±3.7)	85.9	(±3.2)
	Mexico City, 2003	54.1	(±2.8)	66.8	(±4.3)	43.5	(±3.2)
	Monterrey, 2005	47.4	(±4.3)	60.4	(±4.2)	84.7	(±2.5)
	Nuevo Laredo, 2003	44.0	(±3.3)	64.8	(±4.1)	87.2	(±2.5)



Table 2 Continued

Country	Region name	Had one or more parents who smoke	95% CI	Had most or all best friends who smoke	95% CI	Supported ban on smoking in public places	95% CI
	Oaxaca, 2003	27.1	(± 3.2)	53.3	(± 4.9)	90.3	(± 2.0)
	Puebla, 2003	47.8	(± 4.3)	60.5	(± 5.4)	82.4	(± 3.3)
	Tapachula, 2003	23.7	(± 4.1)	43.9	(± 4.7)	91.5	(± 2.0)
	Tepic, 2005	33.0	(± 2.7)	49.1	(± 2.1)	91.8	(± 1.4)
	Tijuana, 2003	41.4	(± 2.5)	55.1	(± 3.0)	90.8	(± 1.6)
	Toluca, 2005	43.4	(± 2.4)	58.1	(± 4.1)	84.7	(± 2.0)
	Veracruz, 2005	35.2	(± 2.3)	62.4	(± 3.1)	88.5	(± 1.5)
	Zacatecas, 2005	46.9	(± 3.7)	53.8	(± 3.8)	87.4	(± 2.2)
Montserrat	Country, 2000	13.3	**	3.1	**	88.3	**
Nicaragua	Country, 2003	34.1	(± 2.2)	16.4	(± 2.6)	85.2	(± 1.5)
Panama	Country, 2002	25.5	(± 3.7)	14.5	(± 3.4)	80.5	(± 3.6)
Peru	Country, 2003	39.2	(± 3.6)	14.3	(± 2.5)	86.3	(± 2.2)
Saint Kitts and Nevis	Country, 2002	16.3	(± 2.4)	5.7	(± 1.8)	77.1	(± 4.9)
Saint Lucia	Country, 2000	31.4	(± 2.5)	7.6	(± 1.7)	79.5	(± 3.8)
Saint Vincent and The Grenadines	Country, 2000	30.8	(± 2.6)	6.6	(± 1.1)	70.5	(± 3.8)
Suriname	Country, 2004	49.5	(± 4.5)	4.9	(± 1.6)	91.0	(± 2.6)
Trinidad and Tobago	Country, 2000	38.4	(± 2.9)	6.7	(± 1.3)	84.7	(± 2.0)
United States	Country, 2000	†	†	51.2	(± 2.2)	†	†
Uruguay	Colonia, 2000	49.2	(± 4.7)	12.9	(± 3.7)	79.5	(± 6.4)
	Maldonado, 2000	53.6	(± 4.1)	20.2	(± 3.6)	76.3	(± 4.2)
	Montevideo, 2000	56.7	(± 3.7)	25.4	(± 3.2)	72.6	(± 2.8)
	Rivera, 2000	51.9	(± 3.9)	18.2	(± 3.7)	81.9	(± 3.1)
US Virgin Islands	Country, 2004	†	†	24.9	(± 2.6)	†	†
Paraguay	Alto Parana, 2003	35.8	(± 3.4)	10.5	(± 2.8)	83.7	(± 2.5)
	Amambay, 2003	35.6	(± 3.7)	8.2	(± 1.5)	86.1	(± 2.8)
	Asuncion, 2003	35.6	(± 3.2)	15.8	(± 2.1)	78.0	(± 3.1)
	Central, 2003	33.2	(± 1.9)	9.8	(± 1.7)	84.7	(± 2.2)
Venezuela	Barinas, 2003	32.1	(± 3.2)	6.8	(± 1.5)	90.3	(± 2.6)
	Cojedes, 2003	37.9	(± 4.6)	8.3	(± 3.1)	89.4	(± 2.3)
	Lara, 2003	39.4	(± 4.5)	10.5	(± 2.7)	85.5	(± 2.0)
	Monagas, 2003	38.6	(± 3.7)	7.4	(± 2.1)	88.0	(± 3.0)
	Nueva Esparta, 2001	41.7	(± 4.3)	6.8	(± 2.1)	85.9	(± 2.8)
	Tachira, 2001	39.4	(± 3.1)	10.2	(± 2.6)	92.1	(± 2.9)
	Yaracuy state, 2001	36.7	(± 3.3)	10.8	(± 2.2)	88.1	(± 1.6)
	Zulia, 2001	40.7	(± 6.1)	12.5	(± 2.9)	85.0	(± 4.6)
Virgin Islands (British)	Country, 2001	13.4	(± 3.9)	3.6	(± 1.9)	79.5	(± 6.9)
<b>Eastern Mediterranean Region</b>		35.6	(± 3.7)	6.9	(± 1.9)	82.8	(± 2.8)
Afghanistan	Kabul, 2004	29.7	(± 5.7)	21.8	(± 6.5)	83.9	(± 3.5)
	Other Provinces, 2004	23.7	(± 5.2)	16.7	(± 4.1)	68.6	(± 7.1)
Bahrain	Country, 2002	31.7	(± 2.0)	7.3	(± 2.2)	82.7	(± 2.2)
Djibouti	Country, 2003	37.4	(± 4.2)	10.9	(± 2.3)	72.1	(± 4.4)
Egypt	Country, 2001	43.3	(± 5.4)	4.6	(± 1.4)	88.5	(± 3.2)
Gaza Strip-West Bank	Gaza Strip, 2000	†	†	†	†	47.1	(± 3.2)
	West Bank, 2000	57.2	(± 2.3)	17.0	(± 2.0)	82.5	(± 1.9)
Iran, Islamic Republic of	Country, 2003	33.3	(± 2.1)	4.6	(± 1.1)	89.5	(± 1.5)
Jordan	Country, 2003	53.3	(± 2.2)	20.6	(± 2.3)	75.5	(± 2.7)
Kuwait	Country, 2001	36.0	(± 1.9)	8.7	(± 1.4)	83.2	(± 1.5)
Lebanon	Country, 2001	67.7	(± 4.3)	12.9	(± 1.5)	85.8	(± 1.9)
Libyan Arab Jamahiriya	Country, 2003	31.4	(± 4.0)	4.7	(± 1.5)	77.3	(± 3.5)
Morocco	Country, 2001	25.2	(± 2.2)	4.9	(± 1.0)	78.0	(± 2.3)
Oman	Country, 2002	20.4	(± 5.1)	6.5	(± 5.1)	88.0	(± 2.7)
Pakistan	Islamabad, 2003	20.3	(± 3.6)	3.9	(± 3.0)	94.5	(± 1.9)

Table 2 Continued

Country	Region name	Had one or more parents who smoke	95% CI	Had most or all best friends who smoke	95% CI	Supported ban on smoking in public places	95% CI
Qatar	Lahore, 2003	30.4	(± 9.1)	6.7	(± 9.4)	96.9	(± 1.2)
	Quetta, 2004	37.0	(± 5.6)	4.5	(± 2.0)	93.4	(± 2.3)
Saudi Arabia	Country, 2004	26.6	(± 2.3)	7.7	(± 1.1)	84.8	(± 1.5)
Somalia	Riyadh, 2001	17.6	(± 3.8)	7.0	(± 1.1)	76.6	(± 2.4)
Sudan	Somaliland, 2004	48.8	(± 12.1)	24.0	(± 11.2)	78.0	(± 7.8)
Syrian Arab Republic	Country, 2001	22.5	(± 2.9)	4.6	(± 2.2)	78.0	(± 3.0)
	Country, 2002	52.1	(± 3.4)	5.1	(± 1.0)	80.0	(± 3.9)
Tunisia	Country, 2001	51.2	(± 3.2)	10.3	(± 1.8)	87.0	(± 1.0)
United Arab Emirates	Country, 2002	28.0	(± 2.2)	6.9	(± 1.6)	72.1	(± 2.6)
Yemen	Country, 2003	43.1	(± 2.0)	6.3	(± 0.8)	78.1	(± 1.2)
<b>European Region</b>		59.6	(± 2.7)	17.5	(± 2.6)	82.1	(± 2.0)
Albania	Country, 2004	46.3	(± 3.3)	3.7	(± 1.0)	93.7	(± 0.7)
Armenia	Country, 2004	67.8	(± 3.3)	7.2	(± 1.8)	90.3	(± 2.2)
Belarus	Country, 2004	59.8	(± 2.1)	23.5	(± 1.8)	86.4	(± 1.3)
Bosnia and Herzegovina	Federation of Bosnia and Herzegovina, 2003	68.8	(± 2.5)	13.5	(± 3.1)	86.1	(± 2.3)
	Republic of Srpska, 2003	60.5	(± 2.1)	13.3	(± 3.5)	87.7	(± 2.7)
Bulgaria	Country, 2002	75.5	(± 2.4)	41.6	(± 4.2)	62.5	(± 2.6)
Croatia (Hrvatska)	Country, 2003	59.6	(± 3.5)	15.2	(± 2.1)	73.5	(± 3.2)
Czech Republic	Country, 2002	53.7	(± 2.7)	32.9	(± 3.7)	68.0	(± 2.0)
Estonia	Country, 2003	58.7	(± 2.4)	27.6	(± 3.2)	78.3	(± 2.1)
Georgia	Country, 2003	73.0	(± 2.4)	9.5	(± 1.5)	76.1	(± 2.1)
Greece	Athens, 2004	69.8	(± 4.0)	11.2	(± 1.6)	83.1	(± 2.7)
Hungary	Country, 2003	57.4	(± 2.9)	25.8	(± 3.8)	69.7	(± 2.9)
Kazakhstan	Country, 2004	53.8	(± 2.4)	9.4	(± 1.8)	89.9	(± 1.1)
Kyrgyzstan	Country, 2004	37.1	(± 5.9)	5.7	(± 2.0)	91.1	(± 1.8)
Latvia	Country, 2002	63.4	(± 3.5)	30.5	(± 2.9)	77.3	(± 2.9)
Lithuania	Country, 2005	58.1	(± 3.0)	27.6	(± 3.4)	66.1	(± 2.5)
Macedonia	Country, 2003	65.9	(± 3.5)	13.1	(± 3.3)	86.7	(± 3.3)
Poland	Country, 2003	58.5	(± 2.6)	17.0	(± 2.7)	75.0	(± 2.1)
Republic of Moldova	Country, 2004	50.2	(± 2.5)	10.7	(± 2.3)	92.4	(± 1.2)
Romania	Country, 2004	63.7	(± 2.6)	14.0	(± 1.8)	86.1	(± 2.7)
Russian Federation	Moscow, 1999	62.5	(± 1.8)	34.9	(± 2.7)	71.0	(± 2.1)
	Sarov, 2002	56.4	(± 3.2)	37.5	(± 4.4)	77.6	(± 2.8)
Serbia and Montenegro	Montenegro, 2004	64.5	(± 3.0)	11.0	(± 2.1)	87.7	(± 2.6)
	Republic of Serbia, 2003	70.8	(± 2.1)	16.9	(± 2.7)	79.0	(± 2.6)
Slovakia	Country, 2003	55.1	(± 2.3)	24.1	(± 2.1)	75.6	(± 2.0)
Slovenia	Country, 2003	46.5	(± 2.2)	18.0	(± 2.8)	71.5	(± 3.0)
Tajikistan	Country, 2004	29.4	(± 3.8)	2.6	(± 1.4)	93.2	(± 2.9)
Turkey	Country, 2003	59.8	(± 1.2)	5.4	(± 0.7)	91.4	(± 0.7)
Ukraine	Country, 2005	62.1	(± 2.0)	24.3	(± 2.5)	83.1	(± 1.5)
<b>South East Asia Region</b>		43.5	(± 3.5)	7.0	(± 1.7)	75.3	(± 1.2)
Bangladesh	Dhaka, 2004	33.5	(± 3.0)	3.1	(± 1.2)	94.4	(± 1.3)
Bhutan							

**Table 2** Continued

Country	Region name	Had one or more parents who smoke	95% CI	Had most or all best friends who smoke	95% CI	Supported ban on smoking in public places	95% CI
India	Country, 2004	17.8	(±2.5)	4.5	(±1.9)	19.8	(±7.9)
Indonesia	Country, 2004	†	†	†	†	74.8	(±1.2)
	Bekasi, 2004	7.9	(±1.4)	20.4	(±2.6)	87.0	(±2.2)
	Jakarta, 2004	66.7	(±3.8)	15.7	(±3.2)	84.8	(±3.4)
	Medan, 2004	74.5	(±3.4)	17.8	(±3.0)	85.9	(±2.7)
Maldives	Rural, 2004	52.2	(±4.7)	6.7	(±1.8)	92.8	(±2.0)
	Urban, 2003	40.3	(±4.0)	13.2	(±3.5)	89.5	(±2.8)
Nepal	Biratnagar, 2004	52.0	(±7.2)	†	†	64.7	(±5.5)
	Mahendranagar and Dhangad, 2004	56.7	(±3.3)	†	†	68.1	(±5.3)
Sri Lanka	Country, 2003	41.2	(±3.9)	3.6	(±1.0)	93.0	(±1.8)
<b>Western Pacific Region</b>		59.7	(±2.9)	5.1	(±1.1)	72.9	(±2.2)
American Samoa	Country, 2005	†	†	43.2	(±4.0)	†	†
Cambodia	Country, 2003	43.9	(±6.6)	2.9	(±1.8)	82.9	(±3.4)
China	Chongqing, 1999	77.2	(±4.0)	5.7	(±0.9)	55.7	(±2.7)
	Guangdong, 1999	60.0	(±2.7)	3.3	(±0.6)	64.3	(±2.1)
	Puyang, 2005	68.1	(±3.9)	4.8	(±1.6)	64.2	(±8.0)
	Shandong, 1999	60.2	(±3.3)	2.1	(±0.6)	63.1	(±2.1)
	Shanghai, 2005	75.3	(±2.5)	2.1	(±0.6)	58.7	(±2.6)
	Tianjin, 2005	69.6	(±2.6)	6.2	(±1.3)	61.3	(±4.8)
	Zhuhai, 2005	64.2	(±3.1)	5.7	(±1.2)	57.2	(±2.6)
Cook Islands	Country, 2003	53.6	(±4.3)	26.0	(±3.8)	75.7	(±4.8)
Fiji	Country, 1999	45.1	(±3.6)	10.2	(±3.5)	54.0	(±8.2)
Guam	Country, 2002	†	†	†	†	†	†
Lao People's Democratic Republic	Luang Prabang Province, 2003	42.4	(±4.6)	2.2	(±1.1)	55.9	(±4.3)
	Savannakhet, 2003	54.3	(±3.0)	5.1	(±1.9)	50.6	(±3.8)
	Vientiane Municipality, 2003	46.3	(±4.5)	3.0	(±1.1)	60.2	(±5.3)
	Vientiane Province, 2003	53.0	(±6.7)	5.4	(±2.1)	48.4	(±5.8)
Macau	Macau, 2001	55.4	(±4.8)	8.5	(±2.2)	58.1	(±3.0)
Malaysia	Country, 2004	†	†	†	†	79.5	(±3.1)
Micronesia	Kosrae, 2000	†	†	54.1	(±6.0)	†	†
	Pohnpei, 2000	†	†	54.4	(±3.7)	†	†
Mongolia	Country, 2003	58.2	(±2.7)	8.9	(±2.2)	83.2	(±1.7)
Northern Mariana	Country, 2004	†	†	60.3	(±2.8)	†	†
Palau	Country, 2000	†	†	41.0	(±4.9)	†	†
Philippines	Country, 2004	55.1	(±2.5)	9.1	(±2.0)	90.5	(±1.9)
Singapore	Country, 2000	36.4	(±1.4)	†	†	†	†
Viet Nam	Denang, 2003	65.7	(±4.9)	4.6	(±1.0)	87.5	(±2.6)
	Haiphong, 2003	53.7	(±5.3)	2.8	(±1.2)	86.2	(±2.2)
	Hanoi, 2003	56.1	(±11.0)	3.0	(±2.7)	91.7	(±2.2)
	Hochiminh, 2003	60.6	(±4.8)	3.4	(±1.4)	89.1	(±3.2)
	Tuenquang, 2003	47.5	(±5.8)	5.3	(±3.2)	85.8	(±4.2)

\*Data from 131 countries are included in this report. Notable countries, by WHO Region, that have not completed the GYTS include: Region of the Americas (Canada), European Region (most Western European countries), and Western Pacific Region (Australia, Japan, and New Zealand).

\*\*No confidence interval calculated because the survey was conducted among a census of students.

†Not available.

how many days have people smoked in your presence, in places other than in your home?"), parental smoking (defined as the percentage of students who answered "both", "mother only", or "father only" to the question "Do your parents smoke?"), best friends who smoke (defined as the

percentage of students who answered "most of them" or "all of them" to the question "Do any of your closest friends smoke cigarettes?"), and support for bans on smoking in public places (defined as the percentage of students who answered "yes" to the question "Are you in favour of

**Table 3** Secondhand smoke policies and laws by Region and country

<b>African Region</b>	
South Africa	Smoking is banned in all public places including the workplace
Tanzania	Effective 1 July 2003, smoking in public places was banned. Under the Tobacco Products (regulation) Act 2003 it is illegal to smoke inside public transport, hospitals, schools, and many other public places
Uganda	Effective March 2004, the environment minister imposed a smoking ban in all public places. Smoking in restaurants, educational institutions, and bars is an offence. Offenders will be fined between \$10 and \$50 if arrested by police, who have been instructed to enforce the law
<b>Region of the Americas</b>	
Argentina	Public education activities began in 2003 in some provinces and municipalities in Argentina. Argentina has programmes where businesses can officially register as being smoke-free. The city of Buenos Aires has recently announced that restaurants and bars smaller than 100 square meters must be smoke-free in October 2006
Brazil	Significant public education activities began in 2003 in some municipalities of Brazil (for example Belo Horizonte, Rio de Janeiro, and the federal district of Brasilia)
Canada	Since 2003, three Canadian provinces and two territories have become smoke-free (requiring 100% smoke-free workplaces and public places including restaurants and bars). Most others will become smoke-free in 2006, including Ontario and Quebec, which combined comprise more than half of Canada's population
Costa Rica	Laws governing public places require facilities to designate smoking areas
Mexico	Laws governing government and related federal facilities require facilities to designate smoking areas
Trinidad & Tobago	Trinidad's 100% smoke-free policies apply only to government facilities
United States	As of October 2005, 14 states have laws that require 100% smoke-free workplaces, restaurants, and bars
Uruguay	The Region's significant exception to weak policies is Uruguay, whose president announced in September 2005 that Uruguay would require all workplaces and public places to be smoke-free beginning in March 2006. If the implementation of Uruguay's smoke-free policy is successful it will provide a model that other Latin American countries may soon follow. In addition, public education activities began in 2003 in Uruguay
<b>Eastern Mediterranean Region</b>	
Iran	In 2004, Parliament passed a bill prohibiting smoking in public places—mosques, cinemas, restaurants, department stores, public transport, and stadiums. The antismoking bill states the government is obliged to fight smoking by campaigning against financial, health, and social hazards of the habit to prevent youth from becoming addicted
Gulf States	There is a leading movement in the seven Gulf states in the area of SHS legislation; a great example can be found in the initiative of tobacco-free Mecca and Medina; which is based on tobacco-free public places and now moving toward a total ban of tobacco sales in the two cities The ban of smoking in public places is based on a plan of action that was designed and put in place by the Ministry of Health in the year 2001; fortunately, it was supported by the governors of the two cities and was therefore implemented immediately. On-the-spot fines are imposed on violators and if repeated, other penalties are sometimes enforced. The legislation is also supported by wide national media and advocacy campaigns In Bahrain, Kuwait, and Oman the enforcement of anti-SHS legislation, in place since the nineties, is very strong, although the process of the WHO-FCTC will strengthen it further. In this group of Member States, the involvement of the Gulf Cooperation Council for Ministries of Health supported coordinating their activities and unifying the SHS measures taken in all seven countries
Egypt	A ban of tobacco use in public places existed in the 1980s, but it was reinforced in 2002 with the adoption of new legislation. However, the ban is not being enforced, and its implementation depends largely on the administration in each facility and public place. The national authorities are working to strengthen the ban, and the adoption of the WHO-FCTC will support that process
<b>European Region</b>	
Austria	A 2003 law prohibits smoking in classes, conference rooms, school sports buildings, buildings open to the public, schools or similar institutions open to children and young people, but there are no sanctions in case of violation
Belgium	As of January 2006, smoking was banned in all enclosed workplaces and social facilities under the employer's authority and to which workers have access
Bulgaria	In 2005, a smoking ban for all public places took effect. Smokers are banned from lighting a cigarette at kindergartens, schools, cinemas, theatres, Internet clubs, and city transport. Taxi drivers and their clients can smoke only outside the taxi. Restaurants of more than 60-person occupancy are now obliged to provide separate areas for smokers and non-smokers. Smaller cafes must be equipped with air-conditioning systems. Fines of BGN 50 up to BGN 150 will be imposed for violations
Czech Republic	In 2003, smoking was banned in public transport including indoor air spaces, during indoor work meetings, in workplaces where non-smokers could be exposed to tobacco smoke, in schools, health care facilities, and indoor sport areas (except dedicated smoking areas)
Cyprus	A 2002 ban prohibited smoking in all public places including places of entertainment, in all government buildings, public transport, and in private cars with passengers younger than 16
Estonia	The Tobacco Act of 2001 was amended in 2005 to impose a complete ban on smoking in health care, education, and government facilities; indoor offices and workplaces (including bars and restaurants); and theatres and cinemas. However, in all of these places special smoking areas are permitted
Finland	The Ministry of Social Affairs and Health is preparing amendments to smoking legislation aimed at curbing smoking in restaurants, to prevent employees being exposed to environmental tobacco smoke. This new tobacco law should take effect in summer 2006
Germany	A 2002 non-smokers protection act for workplaces excludes the hospitality industry and public areas. Smoking is not banned in trains, planes, public transportation, health care and government buildings, or schools.
Ireland	In 2004, Ireland banned smoking in a wide range of workplaces, including pubs, restaurants, offices, and shops. The law does not apply to hotel bedrooms, prisons, or psychiatric hospitals. Fines are foreseen for violators
Italy	A 2005 ban on smoking included all enclosed public places such as bars and restaurants. Businesses face a fine of up to €2000 if they fail to ensure their customers do not smoke, while smokers themselves could face a fine of up to €275 for repeatedly ignoring the new rules. The new rules allow smoking in special sealed-off areas fitted with smoke extractors; however, many bar owners say fitting the automatic doors and forced ventilation systems required by law is too expensive
Latvia	Plans call for a complete ban on smoking in public places including bars and restaurants in 2006
Malta	A 2004 law bans smoking in any enclosed private or public premises that is open to the public except in designated smoking rooms, including bars and restaurants. The present ban is a total ban because the smoking areas are enclosed and totally separated from non-smoking areas
Netherlands	In 2002, the tobacco law was amended to restrict smoking in public places, workplaces, and public transport. In 2004, smoke-free workplace legislation came into force but included exceptions: areas designated for the public in hotels, bars, and restaurants (hospitality industry), and entertainment facilities
Northern Ireland, UK	Workplace smoking legislation, similar to that in Ireland, was introduced in 2005
Norway	A 2003 clean indoor air provision bans smoking in all workplaces including transportation, bars, and restaurants
Poland	A 1995 law on the protection of public health against the effects of tobacco use was amended in 1999 and 2003 and now includes a smoking ban in public places

**Table 3** Continued

Scotland, UK	A ban on smoking in public places in Scotland has been confirmed and is set to take effect in March 2006. The ban will prohibit smoking in pubs, bars, and restaurants. Licensees failing to enforce the ban will face fines up to £2500 and customers caught smoking could be fined £1000
Sweden	A ban on smoking in public places including all restaurants, bars, and cafes was introduced in 2005. The law allows for the possibility of building a separately ventilated designated smoking room where no food or drink is served
<b>Southeast Asia Region</b>	
Bangladesh	Smoking was banned in public places under a high-court verdict and other government regulations since the 1980s. The Bangladesh Tobacco Control Act 2005 made provisions to ban smoking in public places in a comprehensive manner. The law has identified educational institutes, government, semi-government, and autonomous offices, libraries, lifts, hospitals and clinics, court buildings, airports, sea and naval port buildings, railways station buildings, bus terminal buildings, ferries, theatres, covered exhibition centres, public toilets, government and non-government parks and other places as government-designated smoke-free public places. The law has also identified all public transport including motor, bus, train, tram, ship, launch or any motorised vehicle as government-designated smoke-free transport. Under this law, smoking places have also been designated
Bhutan	A smoking ban in public places was introduced 1 March 2005. The ban forbids people from lighting up at government offices, hospitals, schools, parks and shopping centres, among other places
DPR Korea	Laws and regulations ban smoking in restaurants, shops, and railway station waiting rooms
India	Under the India Tobacco Control Act 2003, smoking in public places and public transport has been banned. The law also defined public places and public transport where smoking has been banned. In addition, the state governments have even more stringent laws banning smoking in places like airports and other workplaces. Court orders also ban smoking in public places
Indonesia	A 1991 Presidential Decree declared that a Ministry has to designate, guide, and implement the availability of smoke-free environments. It has also made provisions for banning smoking in public places and other areas such as health facilities, religious facilities, workplaces serving children, and public transportation. The Ministry of Internal Affairs in Indonesia in 1989 banned smoking in schools. The Ministry of Health in 1990 provided instructions on smoke-free workplaces and in 1991 smoking was prohibited for land, sea, and air transportation. The Gubernatorial regulation in Jakarta province was issued in June 2005 to support regulation on air pollution control which will take effect from February 2006. The regulations are mostly aimed at those responsible for smoke-free zones — owners of buildings, offices, schools, houses of worship, and operators of public transportation vehicles. Affected public places include government and private offices, bus terminals, train stations, malls, airports, shopping centres, hotels, and restaurants. Trains, taxis, buses, and public minivans have been declared smoke-free. The law requires those responsible to either declare their premises a smoke-free zone or designate at least one special smoking area located away from other rooms, and it mandates follow-up on violations
Maldives	Legislation prohibits smoking in health facilities, educational institutes, government buildings, and other public places like sports complexes and stadiums, air conditioned restaurants, and public transportation
Myanmar	Smoking has been banned at hospitals, schools, sports stadiums, fields, training camps, and all types of health facilities. The Public Health Law protects the environment from air pollution arising from such factors as tobacco
Nepal	Smoking has been banned in government offices, health facilities, and some public places since June 1992. Smoking has also been banned on flights and in airports
Sri Lanka	A ban on smoking has been enforced in state institutions and state transports. Sale of tobacco in state canteens also has been prohibited since 1999
Thailand	Globally, Thailand has been a pioneer in secondhand smoke legislation. The Non-Smoker's Right to Protection Act (1992) prohibits smoking in public places, public buses, taxis, and air-conditioned trains, and also states that smoke-free areas in trains and restaurants must constitute at least 50% of the total area. The country has also banned smoking on flights and now the Acts and Regulations partially ban smoking in restaurants
<b>Western Pacific Region</b>	
Australia	Smoking is banned in most public places and workplaces throughout Australia The governments of the Australian Capital Territory and the state of South Australia have announced their intention to introduce legislation to ban smoking in all restaurants and bars. The New South Wales government is considering a similar proposal. Smoking in Western Australia's nightclubs was limited to 20% of the venue from July 2004. A complete ban in all enclosed places is expected to be introduced by the end of 2006
China	A smoking ban in public transport is actively enforced in major city subways. National railways ban smoking on passenger trains and in waiting rooms at railway stations throughout the country. More than 500 railway stations have become smoke-free
Fiji	Smoking is banned in government buildings, hospitals, health care facilities, and theatres, and the government has stepped up efforts to promote and enforce these bans. However, there are no bans on smoking in restaurants
Japan	A voluntary based restriction on smoking is being enforced in an increasing number of schools, hospitals, restaurants, municipal offices and workplaces under Health Promotion Act since May 2003. The national government has encouraged administrators of public places including workplaces to take the lead in implementing smoking restrictions
Mongolia	Smoking is banned in public places and workplaces, and restricted to separate smoking areas in all other indoor areas, with a system of fines. However, the ban and restrictions are widely ignored and unenforced
New Zealand	Smoking is banned in most workplaces. The law was extended to include restaurants and bars from December 2004
Philippines	2004 tobacco legislation bans smoking in all public places, enclosed buildings. Several cities have expanded the ban to all indoor areas
Samoa	Smoking is banned in all government buildings and hospitals, but enforcement is weak. The government has tried to promote voluntary smoke-free policies for public transport such as taxis and buses
Singapore	Smoking is banned in most workplaces and public places. Plans for 2006 will extend bans to cover virtually all indoor areas and nature reserves
South Korea	As of March 2003, game rooms, internet cafes and restaurants with an area more than 150 square meters are required to designate non-smoking sections, occupying at least half of their establishments. Owners must also ensure the non-smoking sections remain absolutely smoke-free by installing walls, screens, or ventilation facilities. In addition, smoking is completely banned in all hospitals and schools, as well as outdoor subway platforms, train passageways, and office hallways and bathrooms. These are some of the measures included in the revised regulations of the nation's health promotion law
Tonga	Smoking is banned in government buildings and health care facilities. The government plans to expand smoke-free policies to all public places and workplaces, enclosed restaurants, and public transport
Tuvalu	Smoking is banned in government buildings and health care facilities. The government plans to expand smoke-free policies to all public places and workplaces, enclosed restaurants, and public transport
Viet Nam	In January 2005, the Minister of Transport and Communications signed a directive prohibiting smoking in offices and reception rooms of the ministry and public places, including stations, airports, ports, and public transportation

FCTC, Framework Convention on Tobacco Control; SHS, secondhand smoke; WHO, World Health Organization.



banning smoking in public places (such as in restaurants, in buses, streetcars, and trains, in schools, on playgrounds, in gyms and sports arenas, in discos?)”).

## METHODS

The GYTS is a school-based survey of defined geographic sites that can be countries, provinces, cities, or any other sampling frame including subnational areas, non-Member States, or territories. The GYTS uses a two-stage cluster sample design that produces representative samples of students in grades associated with ages 13–15. The sampling frame includes all schools containing any of the identified grades. At the first stage, the probability of schools being selected is proportional to the number of students enrolled in the specified grades. At the second sampling stage, classes within the selected schools are randomly selected. All students in selected classes attending school the day the survey is administered are eligible to participate. Student participation is voluntary and anonymous using self-administered data-collection procedures. The GYTS sample design produces representative, independent, cross-sectional estimates for each site. Respondents younger than 13 or older than 15 were excluded from these analyses because the objective of this paper is comparisons of same aged children 13–15 years old.

A weighting factor is applied to each student record to adjust for non-response (by school, class, and student) and variation in the probability of selection at the school, class, and student levels. A final adjustment sums the weights by grade and sex to the population of school children in the selected grades in each sample site. We used SUDAAN, a software package for statistical analysis of correlated data, to compute standard errors of the estimates and produced 95% confidence intervals by multiplying the standard errors by 1.96.<sup>13</sup>

## RESULTS

### Exposed to smoke at home

Overall, more than four in 10 students (43.9%) were exposed to smoke at home (table 1). Among the six Regions, exposure to SHS at home was highest in the European Region (mean 78.0%) and lowest in the African Region (mean 30.4%). In the other four Regions, exposure at home ranged from 50.5% (Western Pacific Region) to 37.0% (South-East Asia Region).

More than half the students were exposed to SHS at home in one of 37 sites in the African Region, 12 of 97 sites in the Region of the Americas, seven of 25 sites in the Eastern Mediterranean Region, 26 of 29 sites in the European Region, six of 11 sites in the South-East Asia Region, and 15 of 30 sites in the Western Pacific Region.

### Exposed to smoke in public places

More than half (55.8%) of all students were exposed to SHS in public places (table 1). Exposure to SHS in public places was highest in the European Region (mean 84.8%). For the other five Regions, exposure to SHS in public places ranged from 63.0% (Region of the Americas) to 46.3% (African Region and Eastern Mediterranean Region).

Across Regions, more than 50% of students were exposed to SHS in public places in 18 of 37 sites in the African Region, 65 of 96 sites in the Region of the Americas, eight of 25 sites in the Eastern Mediterranean Region, all sites in the European Region, eight of 11 sites in the South-East Asia Region, and 10 of 18 sites in the Western Pacific Region.

### Had one or more parents who smoke

Nearly half of all students (46.5%) said one or more of their parents smoke (table 2). Students in the Western Pacific Region (mean 59.7%) and the European Region (mean 59.6%) were most likely to have one or more parents who

smoke. Students in the African Region were least likely to have one or more parents who smoke (mean 22.7%). For the other Regions, the prevalence of parents who smoke ranged from 43.5% (South-East Asia Region) to 35.6% (Eastern Mediterranean Region).

More than half of students had at least one parent who smoked in none of 37 sites in the African Region, 12 of 95 sites in Region of the Americas, five of 24 sites in the Eastern Mediterranean Region, 25 of 29 sites in the European Region, five of 10 sites in the South-East Asia Region, and 17 of 23 sites in the Western Pacific Region.

### Had most or all best friends who smoke

Nearly one in five of all students (17.9%) reported that most or all of their best friends smoke (table 2). Students in the Region of the Americas were most likely to report that most or all of their best friends smoke (mean 39.3%). About one in seven students in the European Region (17.5%) reported that most or all of their best friends smoke. Less than one in 10 students reported most or all best friends who smoke in the other four Regions (means of 7.2%, 6.9%, 7.0%, and 5.1% in the African Region, Eastern Mediterranean Region, South-East Asia Region, and Western Pacific Region, respectively).

More than 50% of students reported most or all best of their friends smoke in 17 of 95 sites in the Region of the Americas and 3 of 27 sites in the Western Pacific Region. The other four Regions did not have any sites in which more than 50% of students reported most or all their best friends smoke.

### Thought smoking should be banned in public places

More than three quarters (76.1%) of all students in all Regions thought smoking should be banned in public places (table 2). However, there were differences among Regions. Only six in 10 students (mean 60.2%) in the African Region thought smoking should be banned in public places, compared with slightly over seven in 10 students in the South-East Asia (75.3%) and Western Pacific (72.9%) Regions and more than eight in 10 students in the other three Regions (means of 80.4%, 82.8%, and 82.1%, in the Region of the Americas, the Eastern Mediterranean Region, and the European Region, respectively).

More than 80% of students support smoke-free environments in eight of 37 sites in the African Region, 68 of 96 sites in the Region of the Americas, 13 of 25 sites in the Eastern Mediterranean Region, 15 of 29 sites in the European Region, seven of 11 sites in the South-East Asia Region, and eight of 23 sites in the Western Pacific Region.

## DISCUSSION

Exposure to SHS is a significant health risk for non-smokers and smokers<sup>1-3</sup>; thus, reduction of SHS exposure should be a primary component of national comprehensive tobacco control programmes. This report shows that more than half of all students surveyed were exposed to smoke in public places. Also, nearly half of all students were exposed to smoke at home and had one or more parents who smoke. One fifth of all students said most or all of their best friends smoke. Changing these patterns to reduce the chronic disease burden associated with long-term tobacco smoke exposure is a significant challenge to the tobacco control community. Fortunately, the majority of students surveyed by the GYTS between 1999 and 2005 support implementation of measures to reduce SHS exposure, including banning smoking in public areas.

Initiatives are under way in all six WHO Regions to reduce exposure to SHS. Many countries are making important policy and legislative advances to ban smoking in public places, especially hospitals, restaurants, and public transportation, and some have passed workplace smoking bans.

Comprehensive bans on smoking in the workplace, including restaurants and bars, exist for the entire countries of Bermuda, Bhutan, Ireland, Italy, Malta, Norway, Sweden, Spain, New Zealand, and Uganda. In addition, 10 of 50 US states and 11 of 13 provinces and territories in Canada have enacted smoke-free workplace legislation. See table 3 for examples of secondhand smoke policies and laws by Region and country.

All six WHO Regions are using GYTS data to develop Regional Tobacco Action Plans to address the challenges of tobacco control and identify specific regional needs. These plans focus on implementing the most cost-effective tobacco control measures, as called for in WHO's Framework Convention on Tobacco Control (WHO-FCTC), including price and tax measures; comprehensive bans on advertising, promotion, and sponsorship by tobacco companies; smoke-free environments in public places and workplaces; and graphic health warnings on tobacco packaging.<sup>14</sup> With regard to SHS exposure, Regional plans provide examples of how WHO Member States in these regions can address related issues such as promoting awareness of SHS dangers, introducing and strengthening existing legislation to make public places smoke-free, banning indoor and outdoor smoking on the premises of all educational institutions, and banning smoking on the premises of all health institutions and government facilities. The South-East Asia Region developed a specific objective "to promote awareness on the dangers of exposure to secondhand smoke and to protect the youth from exposure to secondhand smoke by taking measures to ban smoking within educational facilities, in public places, and in public transport" after reviewing data gathered under the GYTS.<sup>15</sup> The Western Pacific Region referred to the value of GYTS data in the most recent five-year Regional Action Plan whose goal is to improve the comprehensiveness of tobacco control efforts.<sup>16</sup> In the Region of the Americas, the PAHO Smoke Free Americas Initiative used GYTS data showing widespread exposure to secondhand smoke in students' homes to identify the need "to raise awareness about the harmful effect of exposure to secondhand tobacco and to support efforts to implement 100% smoke-free environments in all public places and workplaces."<sup>17</sup>

More than 30 countries have conducted a second GYTS, and public health officials are using these data to monitor and evaluate tobacco control efforts such as laws and policies that reduce exposure to SHS. For example, the Philippines introduced several high-profile tobacco control and smoke-free initiatives between 1999 and 2003. GYTS data showed that, over the same period, prevalence of current cigarette smoking declined significantly, exposure to smoke in public places declined significantly, and support for bans on smoking in public areas rose from 39.2% of students in 2000 to 88.7% in 2003.<sup>18</sup>

The WHO-FCTC, signed by 168 countries and ratified by 116 as of January 2006, is the world's first public health treaty.<sup>14</sup> Although the focus of the Convention is on a comprehensive approach to reducing tobacco use, Article 8 identifies tobacco smoke as harmful to public health and calls for parties to protect their populations from exposure:

Parties recognize that scientific evidence has unequivocally established that exposure to tobacco smoke causes death, disease, and disability. Each Party shall adopt and implement in the areas of existing national jurisdiction as determined by national law and actively promote at other jurisdictional levels the adoption and implementation of effective legislative, executive, and administrative and/or other measures, providing for protection from exposure to

## What this paper adds

Secondhand smoke or environmental tobacco smoke is a combination of smoke from a burning cigarette and exhaled smoke from a smoker. This paper presents findings from Global Youth Tobacco Surveys (GYTS) conducted in 132 countries between 1999 and 2005. GYTS data indicate that a large proportion of students in every World Health Organization Region are exposed to secondhand smoke at home and in public places, and many have parents or best friends who smoke. GYTS data have shown widespread and strong support among students for bans on smoking in public areas all over the world.

tobacco smoke in indoor workplaces, public transport, and, as appropriate, other public places.<sup>14</sup>

Full implementation of the principles and obligations contained in the WHO-FCTC will likely limit tobacco use, initiation of smoking, and exposure to secondhand smoke, and will promote cessation.

The findings in this report are subject to at least three limitations. First, these data apply only to youth aged 13–15 years who attended school and therefore are not representative of all persons in this age group. However, in most countries, the majority of young people aged 13–15 attended regular, private, or technical schools.<sup>19</sup> Second, these data apply only to youth who were in school the day the survey was administered and who participated in the survey. School response rates have been high throughout GYTS, and only 21 of 395 survey sites have recorded student response rates less than 80%. Third, findings are based on self-reports from students who may under- or over-report their behaviour and the behaviour of others. Though the extent of potential reporting bias cannot be determined in all countries that participate in GYTS, responses to questions about cigarette smoking and other tobacco use have shown good test-retest reliability in a study of American students.<sup>20</sup>

## Conclusion

Tobacco use and SHS exposure are major contributors to global chronic disease mortality. Findings from the GYTS suggest that projections that tobacco-associated deaths will double over the next decade may be conservative if tobacco use prevalence and widespread SHS exposure among youth remain at current rates.<sup>21</sup> In addition to preventing youth from starting to smoke and helping current smokers to quit, this report shows that the global tobacco control community must improve efforts to reduce SHS exposure. Creating smoke-free areas and educating the public about the dangers of SHS will have complementary effects on tobacco control efforts by reducing the social acceptance of tobacco use around non-smokers.<sup>22</sup> Ongoing surveillance is necessary to measure progress toward eliminating SHS exposure, track implementation of laws and policies to reduce exposure and enforcement of these measures, and gauge public support for a smoke-free society. GYTS data have shown widespread and strong support among students for bans on smoking in public areas all over the world. Countries should engage this positive public health attitude among youth to promote and enforce smoke-free public places and workplaces.

Competing interests: none declared

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